ABSTRACT OF THE DISCLOSURE

Cigarettes are manufactured using modified automated cigarette making apparatus. Those cigarettes possess smokable rods having paper wrapping materials having additive materials applied thereto as patterns. The additive materials, which can have the forms of liquid or paste formulations (e.g., aqueous formulations incorporating starch or modified starch), are applied to a continuous paper web on the cigarette making apparatus. The formulation is applied to the paper web using application apparatus possessing rollers, and one of those rollers has a series of pockets in its roll face to receive additive formulation from a reservoir and to define the pattern of the formulation on the paper. For example, additive material located in the recessed pockets of a first roller is transferred in a controlled manner to the roll face of a second roller in roll contact with that first roller; and the additive material on the roll face of the second roller is transferred to desired locations on the surface of the paper web. The formulation also can be applied to a continuous moving paper web using an application apparatus possessing four rollers. For example, additive material is applied to the roll face of a transfer roller due to roll interaction of that transfer roller with a pick-up roller; roll interaction of the transfer roller with an application roller causes transfer of the additive material from the transfer roller to the application roller; and additive material from the application roller is transferred to the paper web that passes between the application roller and a back-up roller. A radiant dryer is used to dry the additive material that has been applied to the paper web. The radiant dryer is located on one component of a two component assembly that is used to manufacture cigarettes. A first component of the two component assembly provides a source of paper web, applies additive material to that web in a pattern and dries the paper web; while a second component receives the paper web, supplies tobacco filler and manufactures a cigarette rod from the paper web and tobacco filler. Spectrometric techniques are used to ensure proper registration of the additive material on the cigarette rods so manufactured, and to ensure proper quality of those cigarettes.